

REMARKS

With this Amendment, claims 1-16, 21 and 22 are pending in the present application. Claims 1, 4, 7, 13, 15 and 16 have been amended herein, and claims 17-20 have been canceled without prejudice. Claims 21 and 22 are newly presented. The amendments are made without prejudice and in accordance with the specification and its equivalents.

Claim 1 in view of Lubawy (U.S. Patent No. 6,353,479)

With respect to claim 1, Lubawy's reference to a "fluorescent bar code" or infrared fluorescent markings (see Lubawy at Col. 2, lines 3-6) is not understood to teach or suggest the inventive combination of claim 1.

For example, Lubawy fails to teach or suggest a paper medium including a surface having a steganographic message encoded thereon, the steganographic message being *encoded through modulation of the surface's microtopolgy*, the steganographic message including printer control information related to the paper medium that is readable by a machine from an image captured of at least a portion of the paper medium, and that is operable to control a printer so as to optimize print quality for physical characteristics of the paper medium.

Claim 1 should be allowed.

Claims 4-6 in view of Lubawy and Rhoads (U.S. Patent No. 6,442,285)

Claim 4 has been amended in independent form to include the features of its former base claim 1 (prior to today's amendment).

Since Rhoads issued after the filing date of the present application, it is applicable as prior art only under 35 USC § 103(c).

Clear and Conspicuous Statement Regarding Common Ownership

Yet, Rhoads should be disqualified as a proper reference under 35 USC § 103(c), since the present application and the Rhoads patent were, at the time the present invention was made, owned by, or subject to an obligation of assignment to Digimarc Corporation. (See, e.g., MPEP 706.02(1)(2)).

Hence, claims 4-6 are not properly rejected and should be allowed.

Similar arguments apply to claims 12 and 14.

Claim 7 in view of Lubawy

With respect to claim 7, Lubawy fails to teach or suggest at least optimizing printing resolution, e.g., in combination with the features of claim 7.

For example, Lubawy fails to teach or suggest a printer system including an image sensor for capturing an image of print media; a steganographic decoder for reading a steganographic message from the image of the print media, the message including printer control information for optimizing printer operation for the print media, *wherein an optimization relates to print resolution*; and a printer control unit in communication with the decoder for receiving the printer control information and using the information to optimize *print resolution to accommodate* physical characteristics of the print media.

Claim 13 in view of Lubawy

Lubawy fails to teach or suggest the inventive combination of claim 13.

For example, Lubawy is not understood to teach or suggest a method for adapting operation of a printer to a type of print media including: i) providing a digitally watermarked sheet of print media to the printer, wherein a digital watermark in the

digitally watermarked sheet of print media includes an identifier; ii) capturing an image of at least a portion of the print media; iii) decoding the identifier from the image, wherein the identifier includes printer control information; and iv) using the printer control information to index corresponding printer operating parameters which relate to physical characteristics of the print media and adapting operation of the printer in accordance with the parameters.

Claim 13 should be allowed.

Claim 15 in view of Lubawy

Lubawy is not understood to teach or suggest optimizing print quality for a paper-bleeding coefficient of a paper medium, in combination with the features of claim 15.

For example, Lubawy fails to teach a paper medium carrying a steganographic message, the steganographic message including printer control information related to at least a *paper-bleeding coefficient of the paper medium*, the printer control information being readable by a machine from an image captured of at least a portion of the paper medium, and the *printer control information being operable to control a printer so as to optimize print quality for the paper-bleeding coefficient of the paper medium*.

Claim 15 should be allowed.

Claim 16 in view of Lubawy

Lubawy fails to teach or suggest adapting operation of a printer to print at an optimal resolution, where a steganographic message conveys printer control information as contemplated by claim 16.

For example, Lubawy fails to teach or suggest a method for adapting operation of a printer to a type of print media including: i) capturing an image of at least a portion of a

print media; ii) steganographically decoding a message from the image, *the message including printer control information related to an optimal resolution for printing on the print media with respect to at least a physical characteristic of the print media*; and iii) *using the printer control information to adapt operation of the printer to print at the optimal resolution.*

Claim 16 should be allowed.

New Claims 21 and 22

New claims 21 and 22 recite additional patentable features.

For example, claim 21 recites that the optimal resolution in claim 16 is determined based at least in part on an image to be printed to a print media.

And, in claim 22, an optimal resolution for claim 7 is determined based at least in part on an image to be printed to the print media.

Independent consideration of these claims is requested.

Dependent Claims

The many dependent claims currently pending in this application also recite additional patentable features in combination with their respective base claims.

Favorable and independent consideration is requested.

Information Disclosure Statement

An Information Disclosure Statement and Form 1449 are submitted concurrently herewith, along with a deposit account authorization to cover the appropriate fee. It will be appreciated that the cited documents include, among others, those referred to in the subject specification. Consideration of these documents is respectfully requested.

Conclusion

Withdrawal of the above-noted rejections and early passage to issuance are respectfully requested. (Applicant does not belabor other shortcomings of the art herein.).

The Examiner is invited to telephone the undersigned at 503-495-4575 if any issue remains.

Date: February 25, 2003



23735

PATENT TRADEMARK OFFICE

Phone: 503-885-9699

FAX: 503-885-9880

Respectfully submitted,

DIGIMARC CORPORATION

By

Steven W. Stewart

Registration No. 45,133

Attachments: Marked-up and Pending Claims

Marked-up and Pending Claims

1. (Amended) A paper medium including a surface having [carrying] a steganographic message encoded thereon, the steganographic message being encoded through modulation of the surface's microtopolgy, the steganographic message including printer control information related to the paper medium that is readable by a machine from an image captured of at least a portion of the paper medium, and that is operable to control a printer so as to optimize print quality for physical characteristics of the paper medium.

2. (Unchanged) The paper medium of claim 1 wherein the printer control information includes one or more identifiers that are used to look up printer control information used to optimize printer operation for the paper medium.

3. (Unchanged) The paper medium of claim 1 wherein the printer control information includes paper characteristics information of the paper medium.

4. (Amended) A paper medium carrying a steganographic message, the steganographic message including printer control information related to the paper medium that is readable by a machine from an image captured of at least a portion of the paper medium, and that is operable to control a printer so as to optimize print quality for physical characteristics of the paper medium, [The paper medium of claim 1] wherein the steganographic message is encoded in a digital watermark.

5. (Unchanged) The paper medium of claim 4 wherein the digital watermark is embedded on the paper medium using an invisible ink.

6. (Unchanged) The paper medium of claim 4 wherein the digital watermark is repeated throughout at least a portion of the paper medium.

7. (Amended) A printer system comprising:
an image sensor for capturing an image of print media;
a steganographic decoder for reading a steganographic message from the image of the print media, the message including printer control information for optimizing printer operation for the print media, wherein an optimization relates to print resolution; and
a printer control unit in communication with the decoder for receiving the printer control information and using the information to optimize print resolution to accommodate [printer operation for] physical characteristics of the print media.

8. (Unchanged) The system of claim 7 wherein the image sensor is part of a scanning subsystem in a multifunction device having a printing subsystem and a scanning subsystem.

9. (Unchanged) The system of claim 7 wherein the image sensor comprises a CCD array.

10. (Unchanged) The system of claim 7 wherein the printer control unit uses the printer control information to look up operating parameters used to control the operation of a printer.

11. (Unchanged) The system of claim 7 including a computer connected to a printer; wherein the decoder comprises program code executing on the computer.

12. (Unchanged) The system of claim 7 wherein the decoder comprises a watermark decoder.

13. (Amended) A method for adapting operation of an ink-jet printer to a type of print media comprising:

providing a digitally watermarked sheet of print media to the printer, wherein a digital watermark in the digitally watermarked sheet of print media includes an identifier;
capturing an image of at least a portion of the [a] print media;

[steganographically] decoding the identifier [a message] from the image, wherein the identifier includes [including] printer control information; and

using the printer control information to index corresponding printer operating parameters which relate to physical characteristics of the print media and adapting [adapt] operation of the printer in accordance with the parameters. [ink-jet printer, including adapting at least one of volume of ink drops, number of ink drops and placement of ink drops, according to physical characteristics of the print media.]

14. (Unchanged) The method of claim 13 wherein steganographically decoding includes decoding the message from a watermark embedded in the print media.

15. (Amended) A paper medium carrying a steganographic message, the steganographic message including printer control information related to at least a paper-bleeding coefficient [one non-thermal physical characteristic] of the paper medium, the printer control information being readable by a machine from an image captured of at least a portion of the paper medium, and the printer control information being operable to control a printer so as to optimize print quality for the paper-bleeding coefficient [at least one non-thermal physical characteristic] of the paper medium.

16. (Amended) A method for adapting operation of a [non-thermal] printer to a type of print media comprising:

capturing an image of at least a portion of a print media;

steganographically decoding a message from the image, the message including printer control information related to an optimal resolution for printing on [at least one non-thermal physical characteristic of] the print media with respect to at least a physical characteristic of the print media; and

using the printer control information to adapt operation of the [non-thermal] printer to print at the optimal resolution.

21. (New) The method of claim 16, wherein the optimal resolution is determined based at least in part on an image to be printed to print media.

22. (New) The method of claim 7, wherein an optimal resolution is determined based at least in part on an image to be printed to the print media.